## REMARKS

This Paper is submitted in response to the Office Action mailed on August 1, 2005 and having a shortened statutory response period ending on November 1, 2005. This paper is submitted within the statutory response period. The commissioner is hereby authorized to charge any additional fees to Deposit Account No. 02-1818.

Claims 46-49, 51-55, 57-71, 73-74, 76-89, and 131-134 are currently pending. Claims 50, 56, 72, and 75 have been canceled. Claims 1-45 were previously canceled and claims 90-130 were previously withdrawn. No new matter has been introduced as a result of this paper.

Claims 46-55, 59-71, 73-74, 76-83, 89, and 131-134 were rejected under 35 U.S.C. § 102(b) for allegedly being anticipated by European Patent No. 366,564 to Sawamoto et al. (*Sawamoto*). Claims 56-58 were rejected under 35 U.S.C. § 103(a) for allegedly being obvious in view of *Sawamoto*. Claims 46-49, 52-55, 59-66, 69, 72, 78-79, 81-83 and 131-134 were rejected under 35 U.S.C. § 102(b)/103(a) for allegedly being anticipated, or in the alternative, obvious in view of U.S. Patent No. 5,272,074 to Rubens (*Rubens)* as evidenced by *Sawamoto*. Claims 50 and 51 were rejected under 35 U.S.C. §103(a) for allegedly being obvious over *Rubens* as evidenced by *Sawamoto* and further in view of U.S. Patent No. 5,744,515 to Clapper (*Clapper*). Claims 73, 74, 76, and 77 were rejected under 35 U.S.C. §103(a) for allegedly being obvious over *Rubens* as evidenced by *Sawamoto* in further view of U.S. Patent No. 5,824,080 to Lamuraglia (*Lamuraglia*) and U.S. Patent No. 5,242,792 to Rudolph et al. (*Rudolph*). Claims 56-58, 67-68, and 70-71 were rejected under 35 U.S.C. § 103(a) for allegedly being obvious over *Rubens* as evidenced by *Sawamoto*. Claims 84-88 were rejected under 35 U.S.C. §103(a) for allegedly being obvious over *Rubens* as evidenced by *Sawamoto*. Claims 46, 48-50, 52, 53, 59-89, and 131-134 were rejected under 35 U.S.C. § 102(b) for allegedly being anticipated by International Publication No. WO 96/22115 to Delmotte (*Delmotte*). Claims 56-58 were rejected under 35 U.S.C. § 103(a) for allegedly being obvious in view of *Delmotte*. Applicants respectfully disagree with and traverse these rejections as the cited references fail to disclose or suggest the subject matter of the present claims.

*Sawamoto* teaches away from a substrate coated with non-hydrolyzed fibrin as recited in the present claims. *Sawamoto* discloses a substrate coated with a hydrolyzed fibrin layer. *Sawamoto*, page 4 lines 35-37, page 5 lines 1-3, page 7 lines 14-15, page 7 lines 26-27, page 7 lines 42-44. Applicants note that the recited non-hydrolyzed fibrin is disclosed at page 4 lines

11-12 of Applicants' specification. As *Sawamoto* discloses a substrate with a hydrolyzed fibrin layer, *Sawamoto* teaches away from the recited substrate having a non-hydrolyzed fibrin layer.

Moreover, none of the cited references, alone or in combination, discloses or suggests 1) a substrate having pores of different sizes and 2) a fibrinogen-free fibrin layer that extends into each pore a distance of about 2-20μm regardless of the size of the pore diameter as recited in the present claims. *Sawamoto* has no disclosure whatsoever of a substrate having varying pore diameter sizes. In fact, *Sawamoto* suggests the contrary as *Sawamoto* discloses a substrate having pores of uniform size. *Sawamoto*, Figures 2 and 3. *Sawamoto* further fails to disclose or suggest a fibrinogen-free fibrin that extends into the pores. *Sawamoto* has no disclosure whatsoever directed to removing unreacted fibrinogen from the pores. The claimed fibrin coated substrate, however, is subjected to a suction force that removes substantially all the unreacted fibrinogen from the pores, regardless of pore size. *See* present application, page 2 lines 8-19, page 7 lines 7-27.

*Rubens* has no disclosure whatsoever directed to 1) a substrate having pores with varying diameter sizes, nor does *Rubens* have any disclosure regarding 2) the distance which the fibrin extends into the pores. *Rubens* discloses a polymer tube having a fibrin coating. *Rubens*, col. 3 lines 22-25. Wholly absent from *Rubens* is any disclosure directed to 1) a substrate having pores with varying sizes and 2) fibrinogen-free fibrin extending about 2-20μm into each pore. Consequently, *Rubens* does not disclose or suggest the subject matter recited in the present claims.

*Delmotte* teaches away from a support substrate for a fibrin layer. *Delmotte* discloses a fibrin glue gun that delivers fibrinogen and thrombin which react to form a self-standing fibrin film. *Delmotte*, col. 5 lines 6-16. *Delmotte* discloses applying fluid fibrinogen and fluid thrombin between an injured surface and an uninjured surface to form a self-supporting biomechanical barrier for wound repair. *Delmotte*, col. 14 lines 28-44. As the *Delmotte* fibrin film is a self-supporting fibrin film and *Delmotte* has no disclosure whatsoever directed to a fibrin support substrate, *Delmotte* teaches away from a substrate having a fibrin layer as recited in the present claims.

*Clapper* teaches away from a fibrin coated substrate as recited in the present claims. *Clapper* discloses that a vascular graft containing fibrin glue is unsuitable for use. In particular, fibrin glue applied to a vascular graft degrades to release soluble FGF-1 growth agent resulting

in the invasion of smooth muscle cells into the graft porosity making the graft unsuitable for use. *Clapper*, col. 2 line 64 through col. 3 line 23.

*Lamuraglia* and *Rudolph* have no disclosure directed to 1) a substrate having pores with varying sizes and 2) fibrinogen-free fibrin extending 2-20μm into each pore as recited in the claims. *Lamuraglia* has no disclosure whatsoever directed to a fibrin-coated substrate, let alone a fibrinogen-free fibrin as recited in the claims. Rather, *Lamuraglia* discloses a method of using photodynamic therapy to prepare arterial allografts for *in vivo* applications. *Lamuraglia*, col. 4 line 66 through col. 5 line 5. *Rudolph* similarly has no disclosure whatsoever directed to fibrin, let alone a fibrinogen-free fibrin coating on a porous substrate. Rather, *Rudolph* discloses a preservation agent to improve the long term storage of red blood cells. *Rudolph*, col. 3 lines 28-40. As neither *Lamuraglia* nor *Rudolph* has any disclosure directed to 1) a substrate having pores with varying sizes or 2) fibrin, *Lamuraglia* and *Rudolph* fail to disclose of suggest the recited subject matter.

The individual teaching away by each of *Sawamoto*, *Delmotte*, and *Clapper* is a *per se* demonstration of non-obviousness. *In re Dow Chemical Co.*, 837 F.2d 469 (Fed. Cir. 1988). Thus, any alleged rejection based on *Sawamoto*, *Delmotte*, and/or *Clapper* is *per se* non-obvious. *Rubens* has no disclosure whatsoever directed to 1) a substrate having pores with varying diameter sizes, or 2) the distance which the fibrin extends into the pores. Moreover, *Lamuraglia* and *Rudolph* have no disclosure whatsoever directed fibrin, let alone to a porous substrate having a fibrin layer. Consequently, no combination of *Sawamoto*, *Rubens*, *Delmotte*, *Clapper*, *Lamuraglia* and *Rudolph* discloses or suggests the subject matter recited in the present claims.

## CONCLUSION

For the foregoing reasons, Applicants respectfully submit that the above-identified patent application is now in condition for allowance and earnestly solicit reconsideration of same.

Respectfully submitted,

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